broth, a concentrated product of the culture supernatant, an enzyme preparation obtained from culture supernatant, cells obtained by centrifuging the culture broth, a dried product of the cells, a freeze-dried product of the cells, a surfactant-treated product of the cells, a solvent-treated product of the cells, a protein fraction of the cells, an immobilized product of the cells and an enzyme preparation obtained by extraction from the cells;

allowing the enzyme sources, the nucleotide precursor and the sugar to be present in an aqueous medium to form and accumulate the sugar nucleotide in the aqueous medium; and

recovering the sugar nucleotide from the aqueous medium.

REMARKS

Claim 1 has been amended in order to recite the present invention with the specificity required by statute. The subject matter of the amendment is found in the specification as filed, inter alia, at page 38, lines 11-15 and page 45, lines 8-21. Accordingly, no new matter has been added.

Claim 1 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response, claim 1 has been amended in conformity with the Examiner's kind suggestion.

Claims 1, 5, 8 and 15-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Maruyama (EP 0 553 821 B1) in view of Weissborn (J. Bacteriol., Vol 176 (1994) 2611-2618). In support of the rejection, the Examiner asserts that the "treated

product of culture broth" still encompasses glucose 1-phosphate when the cells are mechanically disrupted. The Examiner further asserts the claim as written does not convey that the "treated product of culture broth" is simply an enzyme source, and maintains that trace amounts of glucose-1-phosphate of the "treated product" could be concentrated and potentially become substrate.

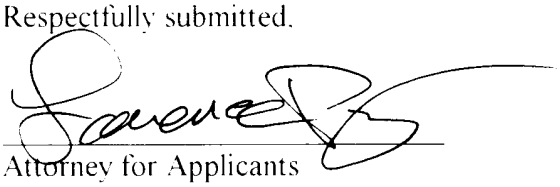
In response, claim 1 is amended to delete " an ultrasonic-treated product of the cells", "a mechanically disrupted product of the cells" and "an enzyme-treated product of the cells". Accordingly, since the claims no longer encompass steps which could possibly result in using glucose-1-phosphate as a substrate, Applicants' process of producing UDP-glucose is quite different from Weissborn, even combined with Maruyama.

In view of the above amendments and remarks, Applicants submit that all of the Examiner's concerns are now overcome and the claims are now in allowable condition. Accordingly, reconsideration and allowance of this application is earnestly solicited.

Claims 1, 5, 8 and 15-20 remain presented for continued prosecution.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended) A process for producing a sugar nucleotide, which comprises:

selecting, as enzyme sources, a) a culture broth of a microorganism capable of producing nucleoside-5'-triphosphate ("NTP") from a nucleotide precursor, or a treated product of the culture broth selected from the group consisting of a concentrated product of the culture broth, a dried product of the culture broth, a culture supernatant obtained by centrifiguring the culture broth, a concentrated product of the culture supernatant, an enzyme preparation obtained from culture supernatant, cells obtained by centrifuging the culture broth, a dried product of the cells, a freeze-dried product of the cells, a surfactant-treated product of the cells, a solvent-treated product of the cells, [an ultrasonic-treated product of the cells, a mechanically disrupted product of the cells, an enzyme-treated product of the cells,] a protein fraction of the cells, an immobilized product of the cells and an enzyme preparation obtained by extraction from the cells, and b) a culture broth or culture broths of at least one strain of microorganism having genes responsible for production of a sugar nucleotide from a sugar selected from the group consisting of glucose, fructose, galactose, glucosamine, N--acetylglucosamine, N-acetylgalactosamine, mannose, fucose, N-- acetylmannosamine and N-acetylneuraminic acid, or a treated product of the culture broth selected from the group consisting of a concentrated product of the culture broth, a dried product of the culture broth, a culture

supernatant obtained by centrifuging the culture broth, a concentrated product of the culture supernatant, an enzyme preparation obtained from culture supernatant, cells obtained by centrifuging the culture broth, a dried product of the cells, a freeze-dried product of the cells, a surfactant-treated product of the cells, a solvent-treated product of the cells, [an ultrasonic-treated product of the cells, a mechanically disrupted product of the cells, an enzyme-treated product of the cells, and] a protein fraction of the cells, an immobilized product of the cells and an enzyme preparation obtained by extraction from the cells;

allowing the enzyme sources, the nucleotide precursor and the sugar to be present in an aqueous medium to form and accumulate the sugar nucleotide in the aqueous medium; and

recovering the sugar nucleotide from the aqueous medium.